

Abstract of the Disclosure:

The invention relates to a magnetoresistive semiconductor element, including a first contact and a second contact, and also a layer of a nonmagnetic semiconductor arranged between

5 the first contact and the second contact. The first contact is composed of a semi-magnetic material. The semi-magnetic material is a strongly paramagnetic material whose electron spins have no preferential direction without an action of an external magnetic field. Under the action of an external

10 magnetic field, the electrons are spin-polarized in the first contact. When a voltage is applied this results in the injection of spin-polarized electrons into the nonmagnetic semiconductor. As a result, in the nonmagnetic semiconductor, only one of the spin channels can be used for transporting the

15 charge carriers, so that a positive magnetoresistive effect is obtained.

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